

**The Butterflies of Venezuela, Part 1: Nymphalidae I (Limenitidinae, Apaturinae, Charaxinae).**—Andrew F. E. Neild, Meridian Publications, Greenwich, London. 144 pp. and 32 color plates. ISBN 0 9527657 0 5.

*General review of the book*

This attractive book is the first of an ambitious series of four parts to be published (tentatively) over the next five years, covering the Nymphalidae, Papilionidae and Pieridae of Venezuela. Neild has done an admirable job combining descriptions of adult butterflies and what is known of their behavior and life histories with the excellent color plates of material from the Natural History Museum (London), photographed by Bernard D'Abrera. In general, this collaboration provides a significant advance beyond D'Abrera's indispensable picture books of the neotropical butterflies (which contain little information beyond identified photographs of specimens) for people seeking to identify Venezuelan material, and as such will be a useful addition to libraries and the shelves of serious butterfly collectors.

The book is organized clearly, with three introductory sections before the main text. "A guide to the contents and use of this book" covers the meanings of terms in the species and generic accounts and in the plate legends, and offers a brief introduction on systematics, classification and nomenclature. For Neild, species correspond to actually or potentially reproductively isolated units (the biological species concept of Mayr, 1940), while subspecies are diagnosably different populations which do not intergrade (the phylogenetic species concept of Cracraft, 1983, and Nixon and Wheeler, 1990). In practice, very few Venezuelan species have been tested for biological isolation, and almost all are recognized on the basis of consistent differences in morphology where they occur in sympatry. Thus, Neild's distinction between species and subspecies is rather arbitrary from a practical perspective, even in his own descriptions of new taxa (see below).

"The study and collection of butterflies" helpfully includes a description of the rather daunting procedures that must be followed to obtain permits to collect and export butterflies from Venezuela. Neild reports that, "permits are not given for private collecting for personal benefit," which implies that the main utility of this book to private individuals will be to curate collections that have already been amassed. Instructions for study of life histories and the photography of living butterflies are also given. The section on preparing a butterfly collection contains some rather poor advice related to the aesthetic qualities of specimen preservation: Neild recommends removing abdomens of large, fatty species such as *Morpho* to degrease them (and reattaching them afterwards). Such procedures greatly reduce the scientific value of a specimen, since it can never be known if the abdomen originally belonged to that specimen or was scavenged from some other specimen and pasted on to replace a missing one, for aesthetic purposes (I have found *Heliconius erato* abdomens attached to *H. melpomene* specimens, and Lamas [1996] commented on a published generic description based on such a "glue job"). Given that non-scientific collection of butterflies is apparently not legal in Venezuela, instructions on the prettification of specimens seem superfluous and, if they lead to compromises of scientific data, inappropriate. Neild also describes homemade spreading boards that

require manipulation of insects after they are removed from the boards, to adjust their height on the pin. This procedure seems undesirable and unnecessary, given the widespread availability of commercially-built spreading boards that allow pins to be placed at the proper depth from the outset. Boards could also be built that allow this problem to be avoided.

The short section on Venezuelan biogeography is supplemented by rather grainy black-and-white habitat photos, mostly of cloud forest, and by more useful political and physical maps on the front and rear endplates.

Neild employs the up-to-date classification scheme of Harvey (1991) and cites other recent works that address higher-level nymphalid relationships (e.g., Otero, 1990; de Jong et al., 1996), resulting in a review of nymphalid classification above the generic level that reflects the state of current knowledge (in many cases rather scant, unfortunately). Descriptions of genera are also carefully researched, and significant revisionary works are generally cited. Some species are split from familiar inclusive genera into separate, smaller genera, such as *Mesotaenia* from *Perisama* and *Fountainea* from *Memphis* (and *Memphis*, in turn, split from *Aenea*). The issue of monophyly of these groups is not addressed. In addition to providing his own field observations, Neild often quotes at length from DeVries (1987) and other authors who have written on the natural history and early stages of particular groups. Sometimes, this practice seems excessive, such as the six verbatim paragraphs on *Eunica* from Jenkins (1990) on pp. 63–64.

Species accounts contain the following subsections: range, subspecies, identification, habits and foodplants. Range succinctly indicates the distribution of the entire species, while the distributions of individual subspecies are addressed in more detail in the subspecies section. Descriptions of new subspecies (discussed further below) are also presented here. The identification section is usually the most extensive, describing wing-pattern and other features that allow discrimination of subspecies and of similar species from one another. The diagnostic characters of the various taxa are described in discursive paragraphs which may be rather long—the notes on identification of *Memphis arachne* run for almost an entire page. Keys are provided for some but not all confusing groups. The habits include altitudinal range, preferred haunts, and behavior. Many larval foodplant records are drawn from DeVries (1987), while others were contributed by Venezuelan colleagues.

The plates are excellent, reproduced at 90% of life size. Many holotype, paratype and syntype specimens from the Natural History Museum in London are figured, some for the first time. Illustration of types is a nice feature because it provides an authoritative view of the specimen with which a particular name is associated. In some instances, the verso and recto figures of particular species represent different specimens, which is slightly confusing (especially when they are paratypes of new taxa, such as *Memphis maria* Pycz and Neild). The figures are numbered consecutively, and refer to numbers given at the top of text pages, making reference between the two simple. Locality data for figured specimens are presented in an appendix. Also included are a checklist, a glossary of terms, and a quite extensive bibliography. The index is a bit unusual, in that it refers primarily not to page numbers but to figure numbers. However, once this is realized, it is easy to use. There is also a gazetteer of some common collecting localities, related by grid quadrants to the map in the front endplate.

*Descriptions of new taxa*

In this book, Neild and coauthors describe 24 new subspecies and two new species. In my view, this is extremely inappropriate, for a number of reasons. First, it is unclear whether or not these descriptions were subject to peer review. Second, one species (*Memphis viloriae* Pycz and Neild) and three subspecies are described from single specimens, resulting in the third problem, which is that many of the descriptions are not clearly based on consistent differences between demonstrably distinct taxa. The genitalia of only one of the new taxa are illustrated. Fourth, three of the holotypes reside in private collections, with no indication of intentions to deposit them in a permanent and publicly accessible museum. Fifth (and perhaps most important), it is not clear to what extent Neild and colleagues have sought collections outside Britain and Venezuela, and in particular in the United States, to examine additional material.

While this review is not the place for a thorough investigation of these problems, I make the following observations as an indication of the importance of thorough exploration of known collections before describing new taxa: I have seen seven specimens of the "new" subspecies *Adelpha olynthia pyrczi* in the Smithsonian, and five additional specimens in the American Museum of Natural History (three of which are identified as *Adelpha olynthia inachia* Fruhstorfer, a name not mentioned in Neild's book). It is ironic that although Neild dedicates the book to (among others) William Beebe, he has not examined Beebe's material from Rancho Grande, which is in the AMNH (nine of Neild's new subspecies occur in the Rancho Grande region). Furthermore, I have found at least one species of *Adelpha* in the Smithsonian, evidently collected in Venezuela, that Neild does not mention or illustrate in the book. That I was able to find these records with relatively little effort or expertise in the groups concerned is a clear indication of Neild's need to study material from a greater diversity of collections before publishing subsequent volumes of this series.

While not without its flaws, I think this is an attractive, useful, and generally well-executed book. As stated at the outset, it is a clear improvement over D'Abrera's *Butterflies of the Neotropical Region*, at least for Venezuela, and will be a helpful tool for curating even large butterfly collections like those of the AMNH and NMNH. Given the complexity of the neotropical butterfly fauna, and the extent of our ignorance regarding its systematics and biogeography, Neild is to be congratulated for attempting to match DeVries' (1987) standard with a guide to a larger and more diverse South American country.—*Andrew V. Z. Brower, Dept. of Entomology, National Museum of Natural History, Smithsonian Institution, Washington, D.C. 20560.*

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